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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,593	12/30/2009	Min-Woo Choi	APP20060004US	9562
66390	7590	09/15/2011	EXAMINER	
LEXYOUUME IP GROUP, PLLC			SMITH, ERIN W	
5180 PARKSTONE DRIVE, SUITE 175			ART UNIT	PAPER NUMBER
CHANTILLY, VA 20151			3632	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,593	Applicant(s) CHOI, MIN-WOO
	Examiner ERIN W. SMITH	Art Unit 3632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 02 August 2011.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 4) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) Claim(s) 1,3-5,7 and 9-12 is/are pending in the application.
- 5a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 6) Claim(s) 12 is/are allowed.
- 7) Claim(s) 1,3-5,7 and 9-11 is/are rejected.
- 8) Claim(s) _____ is/are objected to.
- 9) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 10) The specification is objected to by the Examiner.
- 11) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTC/SB-08)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. Korea 20-2003-0031990, filed on 10/11/2003.
2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
2. Claims 1, 3-5, 7, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stoll (4, 858, 976) in view of Zou (US 2002/0113181 A1) and Min-Woo Choi (KR 20-0302081) and in further view of Doran (6, 856, 761 B2).

3. Considering claims 1 and 5, 7, 9-11 Stoll teaches “a hat-shaped **pressing plate** (9) made of rigid synthetic resin; a **disk-type suction plate** (2) made of soft synthetic resin (Column 5, lines 15-24) and covered with the pressing plate and having a first diameter and an inclined lift surface, wherein the suction plate is configured to contact the adhered surface when the vacuum fixer is adhered to the adhered surface; a vacuum wall being made of gel-type polyurethane and formed at the edge of the pressing plate, and having a second diameter greater than the first diameter, wherein the vacuum wall (19) (a) includes an inclined compression surface that is configured to slide along the inclined lift surface of the suction plate during the adhering of the vacuum fixer onto the adhered surface, (b) fills the vacuum wall filling the fine cracks or the indented portions during the adhering of the vacuum fixer onto the adhered surface, and (c) is configured to contact the adhered surface when the vacuum fixer is adhered to the adhered surface; and a screw tightening member coupled to a protruding front end of the screw shaft...”

4. Stoll fails to teach “a screw shaft (3), a screw tightening member (31) coupled to a protruding front end of the screw shaft (3). Zou teaches “a screw shaft (3), a screw tightening member (31) coupled to a protruding front end of the screw shaft (3),... wherein the screw tightening member (31) has a hanger (Figure 1) formed on the upper end thereof” and also teaches “wherein the screw tightening member has a grip formed on the upper end thereof” (the grip is the top mushroom shaped element not labeled) [limitation from claim 5]. Zou fails to teach “the vacuum wall being made of gel-type polyurethane which is 150 - 250 pcs in viscosity.”

5. Both Stoll and Zou teach of suction cup actuating assemblies. It would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute the

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actuating assembly of Stoll for the actuating screw assembly of Zou to provide a sucker structure capable of firmly adhering to a smooth surface as taught by Zou (paragraph 003). Stoll, as modified, fails to teach of polyurethane with a viscosity of 150 – 250 cps. Choi discloses it is known to use polyurethane for suction cups (Page 2, lines 9-12).

6. It would have been obvious for one of ordinary skill in the art at the time the invention was to make the vacuum wall of Stoll of gel type polyurethane a viscosity of 150 – 250 cps to tightly seal and achieve vacuum suction as taught by Choi and it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

7. Moreover, Stoll as modified above fails to teach “the vacuum wall filling the fine cracks or the indented portions during the adhering of the vacuum fixer onto the adhered” Doran teaches “The cups can be of concertina form and can be provided with an annular, flexible closed-cell foam pad around their mouths to assist in sealing against an irregular surface.” (Abstract) It is old and well known in the art that the vacuum wall of a suction cup initially connects with surface and creates a vacuum throughout, thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of Doran with Stoll as modified to have a suction cup that can work on irregular or rough surfaces.

8. Moreover, Stoll as modified above, fails to teach “wherein the vacuum wall is made of a gel-type polyurethane formed by mixing a diol compound having a molecular weight of 4,000 – 6,000 with methylene-diisocyanate in the ratio of 1 : 8 to 1 : 12.” It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a molecular weight of the.... In the ratio of 1:8 to 1:12, to achieve a desired seal-ability and vacuum, since it

has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. See also *Ballas Liquidating Co. v. Allied industries of Kansas, Inc.* (DC Kans) 205 USPQ 331 and it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

9. **Considering claim 3**, Stoll as modified teaches vacuum wall (19) is in the form of a right-angled triangle, but fails to teach where the ratio of the height to the base line is 1: 1.5 to 1.8. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the height to base line ratio in the range of 1:1.5 to 1:1.8 to achieve a desired seal-ability and vacuum, as it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

10. **Considering claim 4**, Stoll as modified, discloses the claimed invention except is four or five times thicker than the circumferential part (Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the central part of the suction plate four or five times thicker than the circumferential part to achieve a desired seal-ability and vacuum, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Allowable Subject Matter

1. **Claim 12 is allowed.**

2. The following is an examiner's statement of reasons for allowance: the prior art of record fails to teach "a plurality of saw-toothed type contact protrusions that extend from the interior surface of the pressing plate and that engage the exterior surface of the suction plate.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Amendment

The Examiner acknowledges the amending of claims 1, 5, and 10.

Response to Arguments

Applicant's arguments filed 8/2/2011 have been fully considered but they are not persuasive. Applicant's main arguments are points A-E and the examiner respectfully disagrees. Applicant's arguments are as followed:

A. Stoll does not disclose a suction plate with "an inclined lift surface" and a vacuum wall with "an inclined compression surface that is configured to slide along the inclined lift surface of the suction plate."

The examiner respectfully disagrees. Stoll has a suction plate (2) that has an inclined lift surface. Suction cups have a wall that inclines because that is how the vacuum or suction force is created.

B. Stoll does not disclose that the suction plate and vacuum wall are both “configured to contact the adhered surface when the vacuum fixer is adhered to the adhered surface.”

The examiner respectfully disagrees. The nature of a suction cup is to adhere to a surface, if it does not, then it's not serving its functional purpose. The specification clearly details how the suction cup taught in Stoll adhered to a surface.

C. Stoll does not disclose the claimed combination of materials that comprise the pressing plate, the suction plate, and the vacuum wall.

The examiner respectfully disagrees. Stoll as modified in rejection above clearly states the trying to the claimed material. Stoll is modified for the sake of teaching the material limitations.

D. Stoll does not disclose a suction plate having a first diameter and a vacuum wall having a second diameter that is greater than the first diameter.

The examiner respectfully disagrees. See figure 1.

E. The disclosure of Zou, Choi, Doran can not remedy the shortcomings of Stoll.

The examiner respectfully disagrees. In the rejection above the examiner clearly explains the rationale for the 35 C. F. R. status 103, obviousness rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIN SMITH whose telephone number is (571)270-7023. The examiner can normally be reached on Monday to Thursday 9am-7pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrell McKinnon can be reached on (571)-272-4797. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ERIN W. SMITH/
Examiner, Art Unit 3632

/TERRELL MCKINNON/
Supervisory Patent Examiner, Art Unit 3632